MODEL 264 POCKET RESISTIVITY METER

MODEL 264 SPECIFICATIONS

Range: Automatic from 10^9 ohms per square to 10^{10} per square for surface resistivity and 10^6 to 10^{10} ohms for resistance to ground.

Accuracy: ± ½ Decade

Electrode Configuration: Utilizes parallel bars.

Display: LEDs — one per decade.

Power: Utilizes a 9 volt battery. Battery Life over 40 hours of continuous use.

Dimensions: 3.6 inches by 2.4 inches by 1.3 inches.

OPERATION

For Surface Resistivity: Place the Model 264 Pocket Resistivity Meter on the surface being tested and press the center button labeled TEST.

If the LED labeled 10^9 is illuminated, the surface under test has a surface resistivity of 10^5 ohms per square or less. If the LED labeled 10^{10} is illuminated, the surface under test has a surface resistivity of 10^{10} ohms per square or greater. Be sure that the ground wire is not connected through the ground jack when making surface resistivity measurements.

For Resistance to Ground. Place the Model 264 on the surface being tested. Connect the meter to a known ground through the ground jack. When the ground wire is connected through the ground jack the Model 264 will not measure surface resistivity. Press the center button labeled TEST and the illuminated LED will indicate the resistance to ground. If the LED labeled 10^8 is lit, the resistance to ground of the surface under test is 10^8 ohms or less. If the LED labeled 10^{10} is illuminated the resistance to ground of the surface under test is 10^{10} ohms or more.

Battery Replacement

The unit uses a 9 volt transistor battery. The battery should be changed after each 40 hours of use. Remove battery when storing instrument for an extended period of time. To test the battery simply hold the instrument in the air so that the parallel bar electrodes are not in contact with any surface. The LED labeled 10^{10} will be illuminated if the battery has enough life to make good measurements. If no LEDs are lit or the 10^{10} is dimly illuminated, replace the battery. If the LEDs labeled 10^9 or 10^8 are lit clean the space between the parallel bar electrodes with isopropyl alcohol and recheck. If an LED other than 10^{10} is lit the instrument should be returned to the factory for authorized service.

Represented by:

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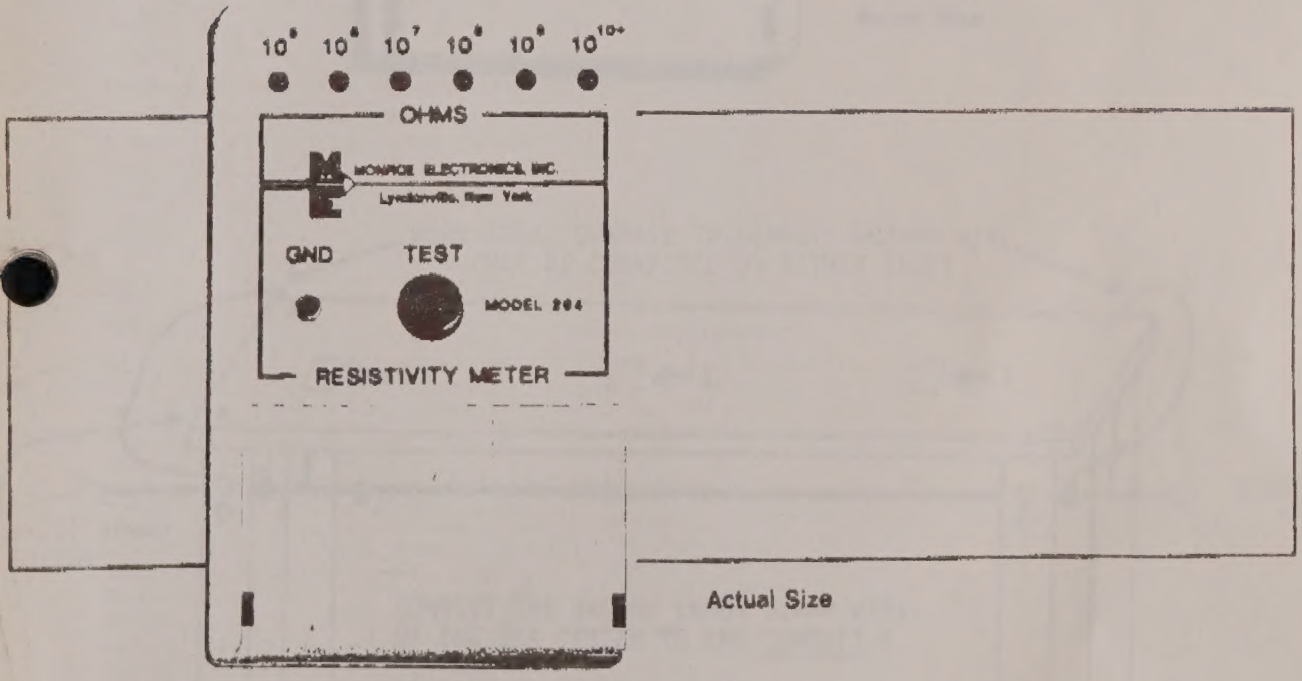
MONROE ELECTRONICS

MODEL 264 POCKET RESISTIVITY METER

The Monroe Electronics Model 264 Pocket Resistivity Meter is the **first** commercially available instrument that measures **both** surface resistivity and resistance to ground. Designed to provide fast and repeatable measurements of conductive work surfaces, static dissipative mats and other static control products, Model 264 conveniently checks surface resistivity and continuity of the work surfaces to ground. The Model 264 has automatic ranging from 10^5 ohms per square to 10^{10} ohms per square with accuracy of ± ½ decade. The Pocket Resistivity Meter utilizes the ASTM recommended parallel bars sensing probe for measurements. Its small convenient pocket size of 3.8 inches by 2.4 inches by 1.3 inches and 9 volt battery operation of over 40 hours make it easy and simple to use in a production environment.



Actual Size

Features:

- Measures both surface resistivity and resistance to ground
- Easy to use — no cable or probes to adjust.
- Portable — uses 9 volt battery.
- Wide range of direct readings in Ohms per square for surface resistivity measurement and Ohms for resistance to ground.
- Utilizes widely accepted parallel bars as sensing element.

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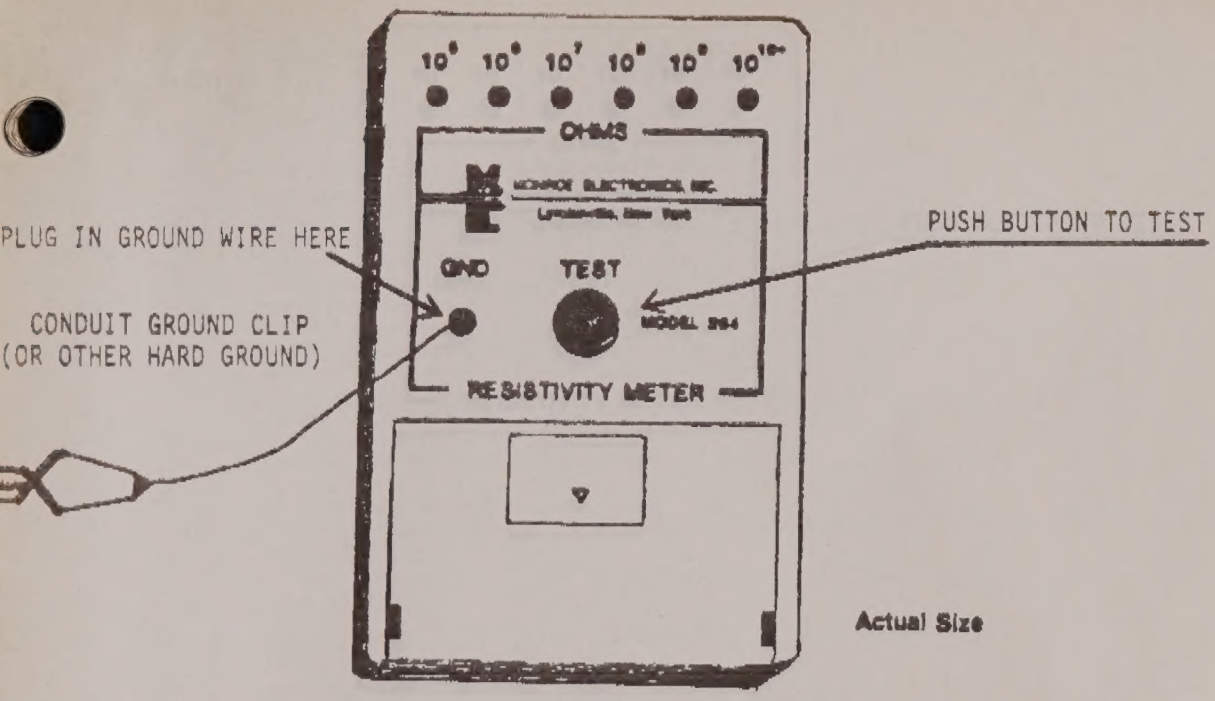
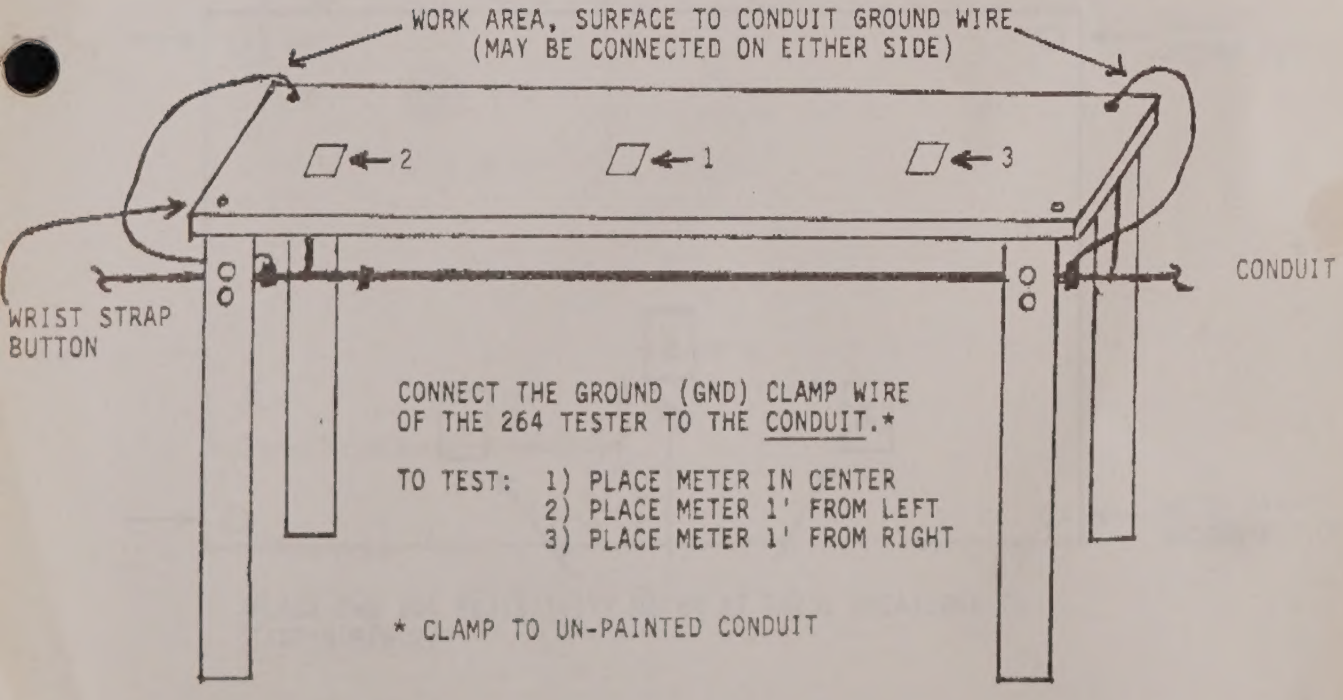
274 POCKET RESISTIVITY METER

Actual Size

SURFACE TO GROUND RESISTANCE TEST

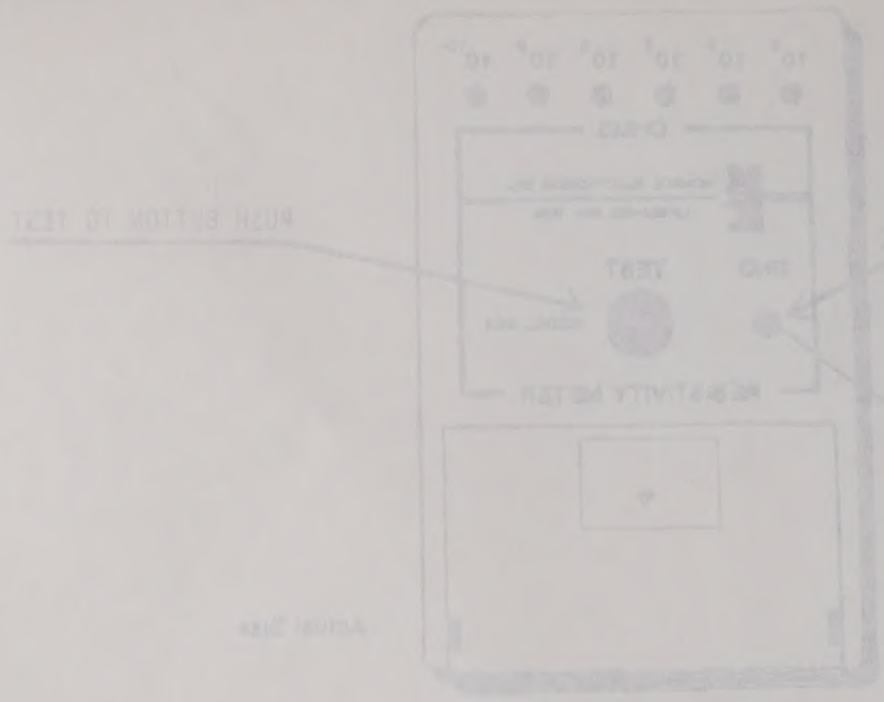


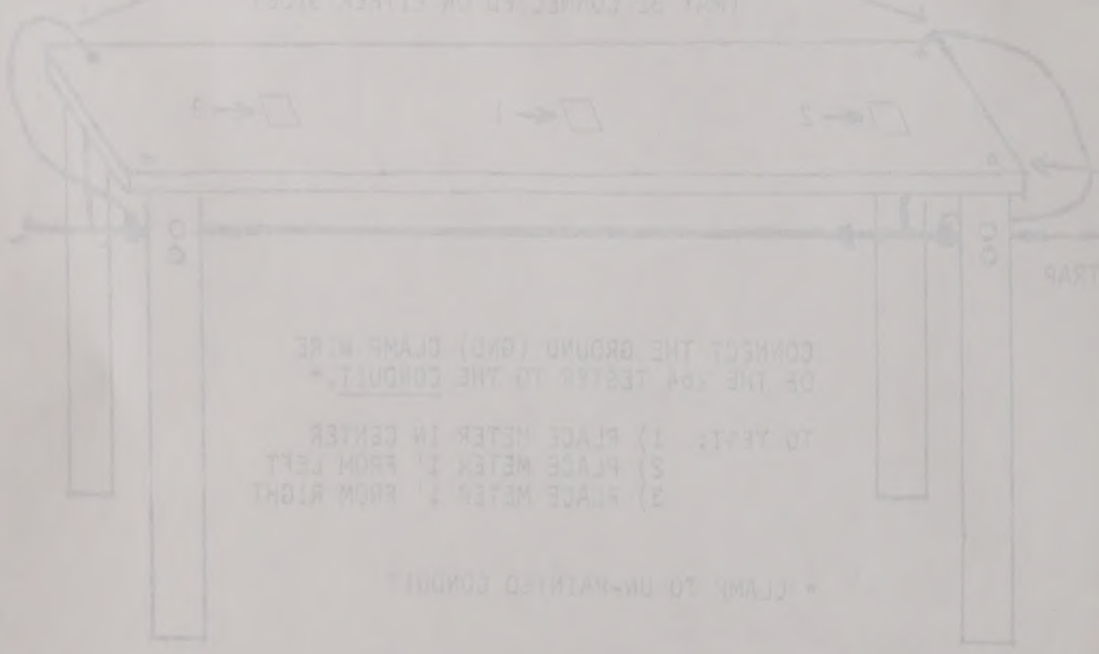


CONNECT THE GROUND (GND) CLAMP WIRE OF THE 264 TESTER TO THE CONDUIT.*

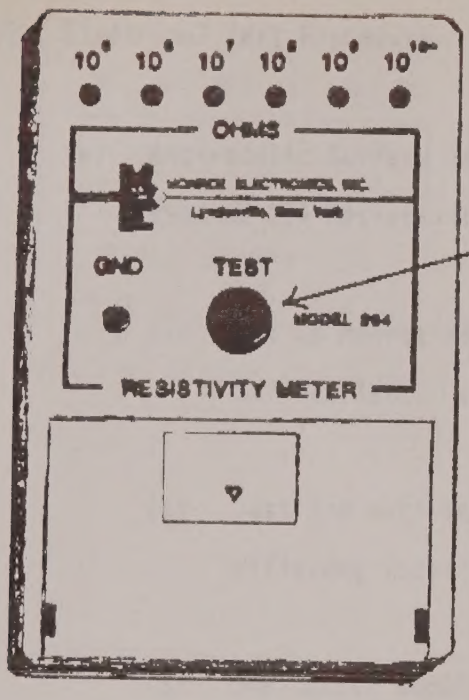
TO TEST: 1) PLACE METER IN CENTER
2) PLACE METER 1' FROM LEFT
3) PLACE METER 1' FROM RIGHT

* CLAMP TO UN-PAINTED CONDUIT



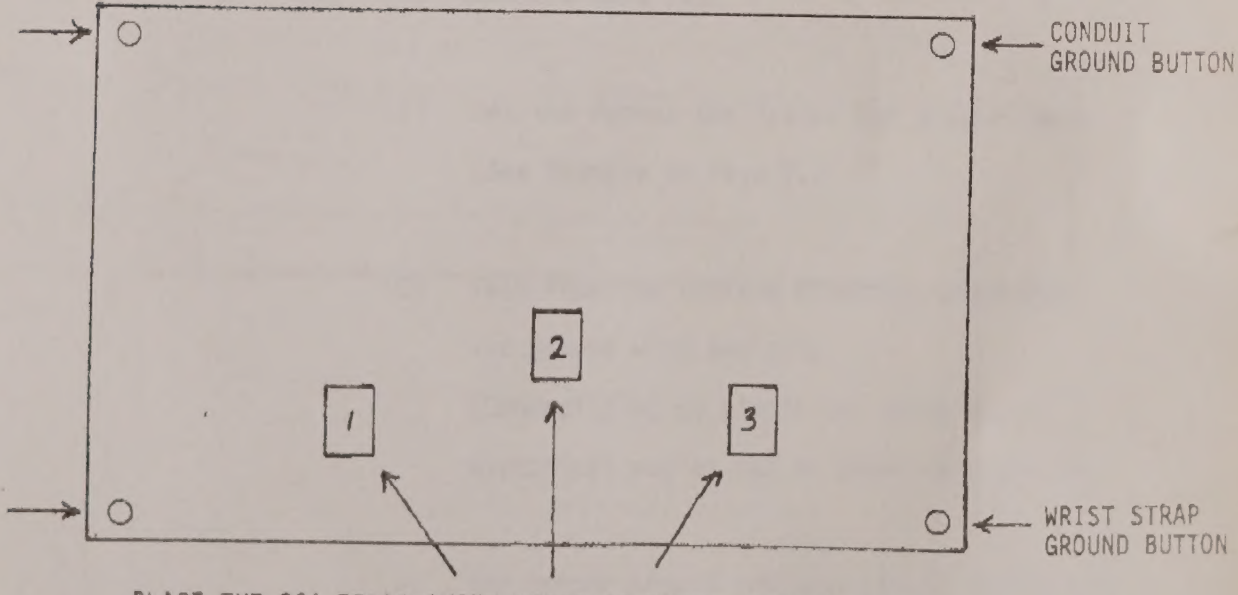


SURFACE RESISTANCE TEST

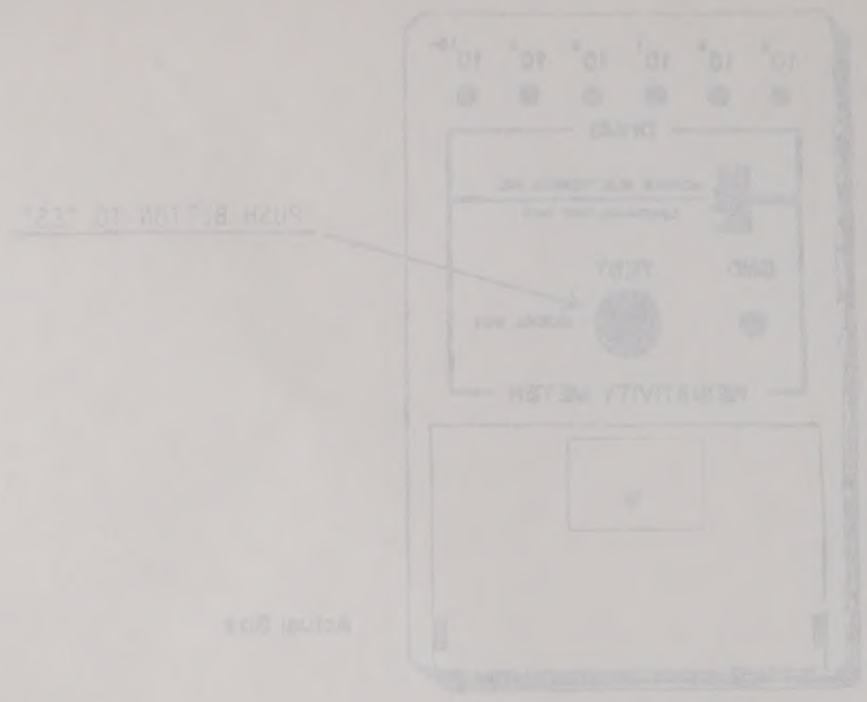


PUSH BUTTON TO TEST

Actual Size



PLACE THE 264 RESISTIVITY METER AT THESE LOCATIONS TO TEST SURFACE.



1.02 Electrical Test Procedure

(a) Anti-static Surface Test

(Monroe 264 Resistivity Test - Pages 6 & 7)

(1) Set up Monroe 264 Tester for Anti-static Surface Test. (See Example on Page 4.)

(2) Test the anti-static surface at three different locations on the surface.

(3) The tester should indicate (10-5) to (10-7).

(b) Anti-static Ground Test

(1) Set the Monroe 264 Tester for ground check. (See Example on Page 5.)

(2) Test from the surface directly to ground, via ground wire and clip.
(Connect clip to electrical conduit, electrical outlet box or other hard ground.)

(3) The tester should indicate (10-5) to (10-6).

(4) Check the wire surface to ground wire for intermittent connection.

TEST PROCEDURE
ELECTROSTATIC WORK STATION

PURPOSE: The purpose for this procedure is to verify the reliability of the anti-static work area. To ensure that all work stations meet the electrostatic discharge (ESD) requirement per Military Handbook DOD-HDBK-263 and the ASTM Committee of Standards as adopted in ASTM-D257.

REFERENCE: DOD-HDBK-263 - Electrostatic Discharge Control Handbook
ASTM-D257 - Standard Test Methods for D-C Resistance or Conductance of Insulating Materials
Electrostatic Control - Section 6

PROCEDURE: Test the anti-static discharge work area the first day of the work week as described below.

EQUIPMENT: Monroe Model 264 Surface and Ground Resistivity Tester (See Example 'A')

1.01 Physical Check

(a) Verify the anti-static surface to ground wire is properly connected and secured to an unpainted electrical conduit.

(b) Verify the "Buttons" on the anti-static surface (that wrist straps and ground wire are tight).

(b) After the wrist strap has been connected, the protective container should be placed on the bench mat. It is now safe to remove the PWB from the protective tray, bag or conductive tote box.

(c) Perform necessary operations on the PWB while the wrist strap remains connected to the bench mat. Be sure the PWB always remains in the approved holder during the repair operation.

(d) If the operator must leave the static dissipative work location for an extended period of time, the PWB should first be placed in a protective container (conductive tray, bag or an approved holder). The operator's wrist strap is next disconnected and the operator is then free to leave.

(e) At the end of a work operation, the PWB should always be placed into a protective container.

(f) If the PWB is to be transported to another work location, the protective container should first be picked up and then the wrist strap disconnected. At the new work location, perform steps (a), (b), and (c).

(g) If the PWB is to be transported out of the immediate area, refer to section 4, Packaging/Shipping of this specification.

4. PACKAGING/SHIPPING

4.01 PWB's should only be packaged at a static dissipative work location.

4.02 The following recommended procedure should be used to package a PWB.

(a) Be sure that the wrist strap is attached to bench mat while performing this operation

(b) Place all PWB's in protective conductive bag.

(c) Seal the bag by folding over the open end towards the device side.

(d) Place protective bag in assigned shipping container.

(e) Pick-up shipping container and remove wrist strap. Shipping container can now be handled in the normal manner.

(b) After the wrist strap has been connected, the protective container should be placed on its bench mat. It is now safe to remove the PWB from the protective tray, bag or conductive tote box.

(c) Perform necessary operations on the PWB while the wrist strap remains connected to the bench mat. Be sure the PWB always remains in the approved holder during the repair operation.

(d) If the operator must leave the static dissipative work location for an extended period of time, the PWB should first be placed in a protective container (conductive tray, bag or an approved holder). The operator's wrist strap is next disconnected and the operator is then free to leave.

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1. GENERAL

1.01 This specification covers the handling of Printed Wiring Boards - (PWB's) and electronic devices. The same precautions outlined in this specification also pertain to static sensitive electronic devices not mounted on PWB's.

1.02 Electronic devices can be easily damaged by a static electric discharge. Therefore, special precautions must be taken during handling to prevent static electric damage. These precautions are intended to prevent a static charge build-up and also to prevent an existing static charge from discharging into the device.

2. STATIC DISSIPATIVE WORK LOCATION

2.01 A static dissipative work location is designed to prevent static damage to electronic devices. The location is equipped with a static dissipating bench mat, and provisions made for connecting an operator's wrist strap to the bench mat.

2.02 All physical contact with PWB's and devices should only be performed at a static dissipative work location. All personnel at this work location should be wearing an approved static dissipative coat or smock.

2.03 All wrist straps and cords should be tested on a daily basis using the wrist strap tester.

3. HANDLING

3.01 All direct handling of PWB's and Electronic devices should only be performed at a static dissipative work location.

3.02 PWB's and Electronic Devices should never be directly handled outside of a static dissipative work location. Only after the PWB or Electronic Device has been properly protected by placement in a conductive tray or bag should the PWB be moved from a static dissipative work location.

3.03 Following is the recommended procedure for handling PWB's at a static dissipative work location.

(a) When approaching a static dissipative work location with or without a PWB, all persons should first connect the wrist strap to the bench mat. This will eliminate any static charge between the person and the work location.